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Dr. Guanrong (Ron) Chen, Ph.D.
Editor-in-Chief
International Journal of Bifurcation and Chaos.

México D.F., November 3, 2013

Communication

Dear Dr. Guanrong Chen,

Attached is the revised version of the manuscript entitled 'An intrinsically three dimensional fractal'.

The referee's general comments were most useful to me in order to produce a version that is more suitable to the Bifurcation and Chaos audience. Below are the replies to the specific comments of the referee. My replies in italics.

If the author wants to reach colleagues in chaos theory, the journal is appropriate but the presentation has to be changed completely.

The manuscript has been fully reworked keeping in mind that the paper is addressed to researchers in chaos theory.

The notation $c_2E_+^2$ in the abstract and $c_2E_+^3$ in the text, which the author apparently confuses himself, and describes himself as clumsy, should be completely removed.

This notation has been removed.

Call it C, S or M.

The set has been called S following the referee's advice.

The introduction should address people working in chaos and should only mention that the motivation comes from Clifford algebras, perhaps quoting the paper in Adv.

Appl. Clifford Alg. where the author introduced his type of multiplication. Topics like scators and hyperbolic numbers cannot be assumed known to the reader of Bifurcation and Chaos.

The introduction has been changed from the second paragraph onwards to address the reader of Bifurcation and Chaos. (hopefully successfully!)

Probably even nilpotent has to be explained.

The meaning of nilpotent has been stated explicitly in the proof of the lemma.

For people working in chaos theory, the equations (4) or (10) probably form a good starting point but it has to be noted what $0/0$ means.

Equation (1) in the revised manuscript is now the starting point, it was equation (4) in the earlier version. A successive limits criterion has been stated to insure an unequivocal meaning to the product definition.

The introduction of the product with different notation $(A_0;A_1,A_2)$ instead of $(s;x,y)$ will not bring them much more insight.

$(s;x,y)$ is being used from the very beginning.

Do they need Lemma 1 and 2 ? When the author wants to tell about his product, he must motivate the reader who is not familiar with Clifford algebras.

These Lemmas have now been preceded by the motivation, namely, the possibility of obtaining preimages.

On the other hand, the generation of the set is the same as for the classical M-set, and Table 1 is well-known - references could be given.

A reference has been added in text regarding the second column in the table where periodic points on the real line are quoted.

However, the reader wants to know which properties of the new set are similar and which are quite different from the M-set. This must be clarified.

It has been made clear that the fourth column in the table is a novel contribution. Also, in the conclusions, similarities and differences with the M-set have been stressed.

For example, the referee does not completely understand what "divergent vicinity" in Lemma 3 means.

Lemma 3 has been reworked to make the statement and proof clearer and restated as Proposition 1. Also, Definition 2.1 in section 2 has been added to clarify the meaning of divergent vicinity.

There is a section 3.1 but not 3.2.

There are now sections 3.1 'Self similarity and symmetries' and 3.2 'Divergent magnitude set in the vicinity of periodic points'.

Readers from chaos will probably not agree that "The basin of attraction of periodic orbits of maps on the real line has only recently been addressed."

Yes, an unnecessary assertion. It has been removed.

The conclusion is not very informative, so it remains unclear what is the main content of the paper.

The conclusion has been fully rewritten. I have been more specific regarding the contributions of the manuscript. Also, I have tried to highlight the similarities and differences with the M-set in complex and hyperbolic two dimensional spaces.

yours,

A handwritten signature in red ink, reading "Hans Pendl". The signature is written in a cursive style with a large, stylized 'H' and a long, flowing 'P'.